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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,632	12/14/2001	Jonathan F. Hester	56754US002	6407

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EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/017,632

Applicant(s)

HESTER ET AL

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 29-53 is/are pending in the application.
- 4a) Of the above claim(s) 37 and 43-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-32, 34-36 and 38-42 is/are rejected.
- 7) ☒ Claim(s) 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3,5. 6) ☐ Other: \_\_\_\_\_

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 29-36, 38-42, drawn to a layered sheet, classified in class 428, subclass 304.4+.
  - II. Claims 37, 43 and 53, drawn to a process for removal of organic substances, classified in class 210, subclass various.
  - III. Claims 44-52, drawn to a layered sheet construction, classified in class 435, subclass various.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a smoke evacuator and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). The process for using the product as claimed can be practiced with another materially different product such as a gas delivery layer comprising a base having a side on which there is a single channel instead of a plurality of channels through which gas can be conveyed to the gas permeable, water impermeable layer.

Inventions III and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). The process for using the product as claimed can be practiced with another materially different product such as a gas delivery layer comprising a base having a side on which there is a single channel instead of a plurality of channels through which gas can be conveyed to the gas permeable, water impermeable layer.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Douglas B. Little on 05/02/2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 29-36, 38-42. Affirmation of this election must be made by applicant in replying to this Office action. Claims 37, 43-53 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 29, 30, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by McKeown (US 4,416,993). McKeown discloses a cell culture device comprising at least one gas permeable, water impermeable membrane 16 and a gas delivery layer 11 proximate the gas permeable, water impermeable membrane 16 (column 2, lines 29-33). The gas delivery layer 11 comprises a plurality of baffles 42 forming a plurality of flow channels through which gas can be conveyed to the membrane 16 (figure 9, column 3, lines 30-35). The membrane 16 is microporous PTFE (column 2, line 33). An aerobic biomass 20

(figure 3) forms on the external wall of the plates (column 2, lines 50-52). It is the examiner's position that McKeown anticipates the claimed subject matter.

6. Claims 29, 30, 32, 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Cote et al (US 6,558,549). Cote discloses a membrane module comprising at least one gas permeable, water impermeable membrane 12 and a gas delivery layer 14 proximate the gas permeable, water impermeable membrane 12 (figures 1 and 2). The gas delivery layer 14 comprises inlet conduit 16 and an out let conduit 18 through which gas can be conveyed to the membrane 12 (column 6, lines 33-40). The membrane 12 is made of porous fabric coated with a gas permeable layer (column 6, lines 19-21). The membrane 12 can be made of microporous PTFE (column 6, lines 26-28). The membrane 112 is folded around the spacer 114 and fastened to itself with a line of stitching 122(column 8, lines 26-30). The membrane and the gas delivery layer together form a planar element. An aerobic biofilm is adjacent the planar element (abstract). Figure 11 shows the apparatus is wound into a helix. It is the examiner's position that Cote anticipates the claimed subject matter.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown (US 4,416,993) or Cote et al (US 6,558,549) in view of Rinker et al (US 4,333,779). Neither McKeown nor Cote discloses or suggests the microporous membrane having a surface that is either one or both of undulated or corrugated in shape. Rinker discloses an apparatus for manufacturing a bio-oxidation and nitrification module useful in treating sewage comprising alternating flat sheets and corrugated sheets to provide a large surface area upon which micro-organism can grow and further avoid straight "fall through" of the waste water through the module (abstract, column 1, lines 11-15, 36-42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microporous membrane having a corrugated surface motivated by the desire to provide a large surface area upon which micro-organism can grow and further avoid straight "fall through" of the waste water through the apparatus.
9. Claim 31 and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown (US 4,416,993) in view of EP 526 823. McKeown discloses the plate (gas delivery layer) 11 made of a microporous material such as PTFE laminated with a woven nylon fabric (abstract, column 2, lines 34-36). McKeown is silent as to a fluoropolymer coating onto the porous membrane 16. EP'823 discloses a porous PTFE article for diffusing gas into aqueous liquids having surfaces coated with the fluoropolymer composition to provide heat and chemical resistance (abstract, page 7, lines 19-21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a

coating of fluoropolymer on the surface of the microporous membrane of McKeown motivated by the desire to increase heat and chemical resistance of the membrane.

10. Claim 31 and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cote et al (US 6,558,549) in view of EP 526 823. Cote discloses a spacer (gas delivery layer) 14 made of a non-woven polypropylene mesh (column 6, lines 31-33). Cote is silent as to a fluoropolymer coating onto the porous membrane 12. EP'823 discloses a porous PTFE article for diffusing gas into aqueous liquids having surfaces coated with the fluoropolymer composition to provide heat and chemical resistance (abstract, page 7, lines 19-21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a coating of fluoropolymer on the surface of the microporous membrane of Cote motivated by the desire to increase heat and chemical resistance of the membrane.

***Allowable Subject Matter***

11. Claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art discloses or suggests an apparatus comprising a structure recited in claim 29 on which there are microchannels in the base that extend the length of the flow channels.



**Conclusion**

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on Tue-Fri, 8:30-6:00 and on alternating Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV  
May 6, 2003

  
TERREL MORRIS  
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